Thermal Coal
Resources and Energy Quarterly September 2018

Australia is the second largest thermal coal exporter in the world.

203 million tonnes exported in 2017–18, valued at $22.6 billion

Around 80% of Australia’s thermal coal is exported

1 tonne of coal powers the average Australian household for approximately 4 months.

Australia’s thermal coal export earnings by destination, 2017–18

- Japan: 44%
- China: 21%
- South Korea: 13%
- Taiwan: 11%
- Malaysia: 3%
- India: 2%
- Other: 6%

Share of world trade (2017)

- Rest of World: 20%
- United States: 11%
- South Africa: 7%
- Colombia: 8%
- Russia: 14%
- Australia: 20%
- Indonesia: 37%
6.1 Summary

- Australian thermal coal prices have been supported in recent months, driven by strong demand in Asia. However, the Newcastle benchmark spot price is forecast to decline from an average of US$105 a tonne in 2018 to US$75 a tonne in 2020, as demand growth slows.
- Australia’s export volumes are forecast to grow from 203 million tonnes in 2017–18 to 208 million tonne in 2019–20, reflecting a recovery from supply disruptions in Australia in 2017, and modest production growth from new capacity and productivity improvements.
- Australia’s thermal coal export earnings reached a record $23 billion in 2017–18, driven by strong prices. Export earnings are forecast to reach a new record of $25 billion in 2018–19, before declining to $19 billion in 2019–20, as lower prices offset rising export volumes.

6.2 Prices

Prices are forecast to be weighed down by softening demand

The Newcastle benchmark spot price surged to a six-year high of over US$120 a tonne in July, before softening as temperatures cooled and hydro output increased in China. Nevertheless, demand from China and India have been robust, driven by strong power demand and constrained domestic thermal coal output. The thermal coal spot price averaged an estimated US$117 a tonne in the September quarter, up 13 per cent on the quarter and 25 per cent on the year (Figure 6.1).

The divergence between prices for higher and lower quality coal continued to grow in the September quarter, primarily driven by softening demand from China for lower energy content coal.

In August, it was confirmed that Glencore and several Japanese utilities settled the thermal coal contract for April 2018 to March 2019 at US$110 a tonne. This follows the abandoned negotiations between Glencore and Japan’s Tohoku Electric Power (traditionally the lead negotiator for the Japanese reference price) earlier in the year, which resulted in the Asian thermal coal market being left without an industry benchmark.

The Newcastle benchmark spot price is forecast to drift lower over the next two and a half years, from an average of US$105 a tonne in 2018, to US$84 a tonne in 2019 and $75 a tonne in 2020. The forecast decline in the thermal coal price is underpinned by an expected softening in import demand, particularly as domestic supply picks up in China, and as nuclear reactors come back online in Japan and South Korea. The thermal coal Japanese reference price is also forecast to decline in line with spot prices, from US$110 a tonne in JFY 2018–19 to US$83 a tonne in JFY 2019–20 and $72 a tonne in JFY 2020–21.

Figure 6.1: Thermal coal spot prices, weekly

Notes: Newcastle prices are Net As Received (NAR). QHD is China’s Qinghuangdao port. Source: IHS (2018)

Smaller market participants were left to look to index-linked pricing and term contracts between other smaller buyers and miners for price guidance. Reforms in Japan have resulted in increased competition in the energy sector, resulting in utilities cutting costs, diversifying supply and increasing participation in the spot market. Nevertheless, contract prices are likely to continue to play a role in thermal coal markets, as utilities attempt to reduce their exposure to volatile coal prices. Glencore and Tohoku have reportedly resumed negotiations for an annual supply contract starting in October.
6.3 World trade

World thermal coal markets have remained tight, as supply struggles to keep up with strong demand, particularly from China and India. World trade in thermal coal is forecast to grow by 1.1 per cent to 1.1 billion tonnes in 2018.

Demand for thermal coal is expected to soften over the following two years, driving a modest decline in world thermal coal trade of 0.8 per cent to 1.09 billion tonnes in 2019, and 1.0 per cent to 1.08 billion tonnes in 2020.

Import demand for thermal coal is expected to be weighed down by domestic coal supply picking up in China, nuclear reactors coming back online in Japan and South Korea, and developed countries continuing to shift away from coal-fired power generation, particularly in the European Union. Modest demand growth from emerging economies, particularly India, is expected to cushion the decline. Indonesia and Australia are expected to remain the largest and second largest exporters of thermal coal, respectively.

World imports

China’s coal imports will continue to be driven by government policy

China’s thermal coal imports surged by an estimated 21 per cent over June and July, driven by a prolonged heatwave, which increased air conditioning usage and pushed up electricity demand. China’s thermal power output (mostly comprising of coal-fired power stations) grew by 6.2 per cent year-on-year in the first half of 2018.

There has also been a decline in China’s domestic coal output (Figure 6.2). In addition to the closure of 80 million tonnes of capacity in the year to July — as part of the annual target of 150 million tonnes — there have been renewed efforts to reduce pollution and improve mine safety. Subdued domestic coal production is expected to continue to provide support for imports in the near-term.

Figure 6.2: China’s total coal output and thermal coal imports, year-on-year change

China’s imports of thermal coal are subsequently forecast to decline over the remainder of the outlook period to 190 million tonnes in 2020. Despite ongoing capacity cuts and output restrictions in China’s domestic coal sector, the addition of new capacity is expected to result in a net increase in output over the following two years, and consequently reduce import demand. China has large reserves of thermal coal, and in 2017, domestic production accounted for 86 per cent of total thermal coal consumption. Another factor affecting China’s coal imports will be the growing consumption of gas, with government policies encouraging gas use in place of coal to reduce air pollution.

Government policy will continue to be the key factor affecting coal imports, and remains the largest uncertainty to the outlook. In particular, the government is expected to increasingly use coal import restrictions to target domestic coal prices within a price range. When domestic prices are high, import restrictions are likely to be relaxed in order to help cool domestic thermal coal markets. When domestic prices are low, import restrictions are likely to be more stringent to support domestic coal producers.
India’s thermal coal imports are forecast to grow
India’s imports of thermal coal grew by 26 per cent in the first half of 2018. The rise in imports reflects strong demand from growing coal-fired power generation (which reached a record high 92 terawatt hours in May 2018), coupled with subdued domestic output.

India’s thermal coal imports are forecast to remain robust over the outlook period, growing at an average of 1.9 per cent annually, as growth in consumption outpaces growth in domestic supply. In August, Coal India, the state-owned mining company which accounts for around 80 per cent of domestic supply, acknowledged that the production target of one billion tonnes by 2020 would not be met. While India has large reserves of thermal coal, domestic production has continued to face barriers to growth, including logistics, transport, regulatory and environmental challenges.

Japan’s imports of thermal coal are forecast to remain broadly steady
Japan’s imports of thermal coal declined by 1.9 per cent year-on-year in the first half of 2018. Japan’s thermal coal imports have been affected by the ongoing restart of nuclear reactors following the Fukushima disaster in 2011. At the time of writing, nine of Japan’s fleet of 42 nuclear reactors had gained approval to restart, though operations at Ikata No. 3 have been suspended pending a High Court injunction.

Japan’s thermal coal imports are forecast to remain broadly steady out to 2020. While Japan’s thermal coal demand is expected to be affected by ongoing nuclear restarts, with another two reactors expected to restart by 2020, there are new coal-fired power plants in the project pipeline which will support import demand. At the time of writing, there are 11 coal-fired power plant projects with a combined capacity of 4.5 gigawatts that are expected to come online over the next two to three years.

South Korea’s thermal coal imports forecast to decline
South Korea’s thermal coal imports grew marginally, by 1.5 per cent year-on-year, in the first seven months of the year, supported by prolonged maintenance work at over half of its nuclear power fleet. Over the same period, imports from Australia declined by 24 per cent, while imports from Russia, South Africa and Canada grew by 14 per cent, 20 per cent and 63 per cent, respectively, primarily driven by price differentials.

New regulations on the sulphur content of coal consumption could further support a substitution away from Australian coal, which has higher than average sulphur. However, as the sulphur content cap applies to consumption, not imports, it does not exclude imports from Australia — these just need to be blended with lower sulphur coal from elsewhere.

South Korea’s thermal coal exports are forecast to decline over the outlook period, as more nuclear reactors come back online from maintenance work. Coal exports are also expected to be affected by government efforts to shift away from coal-fired power generation. The latest, in a series of measures aimed at reducing coal use, is a proposed additional consumption tax on coal (which could take effect in April 2019), representing the largest coal tax rise to date.

Demand from emerging Asia forecast to grow
Emerging countries in Asia are expected to become increasingly important sources of demand growth, driven by new coal-fired power projects (Figure 6.3).

Figure 6.3: New coal-fired power capacity expected online in South Asia and South East Asia, 2018 to 2020

Notes: Only includes power stations under construction. Indonesia has been excluded as it is self-sufficient in coal.
Source: GlobalData Power (2018)
World exports

Indonesia’s thermal coal exports forecast to grow

Despite inclement weather, Indonesia’s thermal export exports grew by 14 per cent year-on-year in the first five months of 2018. Indonesia is expected to remain the world’s largest exporter of thermal coal, with exports forecast to grow by 4.4 per cent in 2018 and by 0.9 and 1.2 per cent in 2019 and 2020, respectively.

Prices for Indonesia’s thermal coal, which is typically lower energy than Australian coal, have declined, especially relative to the Newcastle 6000kcal benchmark price. This has supported strong growth in exports of Indonesian coal to India, which is a particularly price sensitive buyer.

Indonesia’s thermal coal exports growth is expected to be driven by more supportive government policy over the outlook period. The government has historically prioritised securing low-cost coal for the domestic power sector, through the implementation of price caps and a requirement to sell at least 25 per cent of coal domestically (the Domestic Market Obligation — DMO).

However, coal is one of Indonesia’s largest exports, and there is growing pressure to increase coal exports to help narrow the country’s current account deficit. In August, the Indonesian Ministry of Energy and Mineral Resources revised the 2018 coal production target up by 25 million tonnes to 510 million tonnes, with the additional tonnes intended to increase exports.

South Africa’s thermal coal exports to remain broadly steady

South African thermal coal exports totaled 45 million tonnes in the first 7 months of 2018, remaining broadly steady year-on-year. South Africa’s thermal coal exports are forecast to remain flat over the outlook period. Eskom, the national electricity utility, has had financial difficulties due to large debts, and its coal supply contracts with domestic producers are expiring soon. There is a risk that after the contracts expire, the utility will not be able to secure coal at prices it can afford, resulting in the South African Government potentially intervening and requiring producers to divert sales from export markets to the domestic market, which could further reduce South Africa’s exports.

Russia’s thermal coal exports set to grow

After a strong start to the year, Russia’s thermal coal exports have slowed, driven by a seasonal decline in demand from Europe and weather-related disruptions. Nevertheless, Russia’s thermal coal exports have grown by 16 per cent year-on-year in the first five months of 2018, and are expected to continue to grow, supported by growing sales to the Asian market, a weak Ruble, and rail and port capacity expansions.

United States’ coal exports expected to decline

Thermal coal exports from the United States have continued to surge, growing by 42 per cent on the year in the first half of 2018 as a result of high prices and strong demand. However, exports from the United States are forecast to drift lower over the next two years, as prices decline and as tariffs imposed by China and Turkey take effect.

Figure 6.4: Annual change in world thermal coal exports

![Figure 6.4: Annual change in world thermal coal exports](image-url)
6.4 Australia

Australia’s thermal coal export earnings reach a record high

High thermal coal prices have driven Australia’s export earnings to a record $23 billion in 2017–18, an increase of 19 per cent from the previous financial year. Over the same period, export volumes only grew marginally, by 0.4 per cent to 203 million tonnes (Figure 6.5).

Australia’s thermal coal export earnings are forecast to grow by a further 13 per cent to new record of $25 billion in 2018–19. Despite a forecast decline in spot prices, export earnings are expected to be supported by the high contract price settled for the 2018–19 Japanese fiscal year (March 2018 to April 2019). An estimated 30 to 40 per cent of Australian thermal coal is sold under term contracts, with the remainder sold on spot markets. Thermal coal export earnings are forecast to decline by 24 per cent to $19 billion in 2019–20, as both contract and spot prices decline.

A forecast increase in production and export volumes is expected to partially offset the impact of softer prices (Figure 6.6). Export volumes are forecast to increase to 208 million tonnes in 2019–20. Growth in export volumes over the outlook period is expected to be supported by an easing of logistical constraints that affected exports in 2016–17, including congestion at ports, industrial action and rail maintenance. The only substantial new addition to capacity over the outlook period is MACH Energy’s Mount Pleasant mine, which is expected to gradually ramp up to 7.5 million tonnes of output annually. Export growth will also be supported by planned expansions, most notably at Yancoal’s Moolarben mine, and productivity improvements across several operations.

Revisions to the outlook

Australia’s thermal coal export earnings for 2018–19 have been revised up by $2.9 billion from the June 2018 Resources and Energy Quarterly. Both spot and contract prices have been stronger than expected. Export earnings for 2019–20 are broadly unchanged.
Table 6.1: World trade in thermal coal

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>2017</th>
<th>2018(^f)</th>
<th>2019(^f)</th>
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<th>2018(^f)</th>
<th>2019(^f)</th>
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<td>812</td>
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<td>204</td>
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<td>190</td>
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<td>–2.8</td>
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<td>0.8</td>
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<td>–1.0</td>
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<td>United States</td>
<td>Mt</td>
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<td>45</td>
<td>42</td>
<td>38.0</td>
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Notes: \(^f\) forecast.
Source: IHS (2018); Department of Industry, Innovation and Science (2018)
## Table 6.2: Thermal coal outlook

<table>
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<th>World</th>
<th>Unit</th>
<th>2017</th>
<th>2018(^f)</th>
<th>2019(^f)</th>
<th>2020(^f)</th>
<th>2018(^f)</th>
<th>2019(^f)</th>
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<tr>
<td>– nominal</td>
<td>US$/t</td>
<td>84</td>
<td>110</td>
<td>83</td>
<td>72</td>
<td>31.0</td>
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<td>–13.3</td>
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<td>– real(^c)</td>
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<td>110</td>
<td>81</td>
<td>70</td>
<td>27.8</td>
<td>–26.2</td>
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<td><strong>Spot prices(^d)</strong></td>
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<tr>
<td>– nominal</td>
<td>US$/t</td>
<td>88</td>
<td>105</td>
<td>84</td>
<td>75</td>
<td>19.9</td>
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<td>–10.2</td>
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<td>US$/t</td>
<td>90</td>
<td>105</td>
<td>82</td>
<td>73</td>
<td>17.0</td>
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<td><strong>Australia</strong></td>
<td>Unit</td>
<td>2016–17</td>
<td>2017–18</td>
<td>2018–19(^f)</td>
<td>2019–20(^f)</td>
<td>2017–18(^f)</td>
<td>2018–19(^f)</td>
<td>2019–20(^f)</td>
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<td>Production</td>
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<td>205</td>
<td>208</td>
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<td>22,555</td>
<td>25,483</td>
<td>19,298</td>
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<td>– real value(^h)</td>
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<td>23,073</td>
<td>25,483</td>
<td>18,841</td>
<td>17.1</td>
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<td>-26.1</td>
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**Notes:**
- \(^b\) Japanese Fiscal Year (JFY), starting April 1, fob Australia basis. Australia–Japan average contract price assessment for steaming coal with a calorific value of 6700 kcal/kg gross air dried;
- \(^c\) in current JFY US dollars;
- \(^d\) fob Newcastle 6000Kcal; \(^e\) in 2018 US dollars; \(^f\) forecast; \(^h\) in 2018–19 Australian dollars.

**Source:** ABS (2018) International Trade in Goods and Services, Australia, Cat. No. 5368.0; IHS (2018); NSW Coal Services (2018); Queensland Department of Natural Resources and Mines (2018); Company Reports; Department of Industry, Innovation and Science (2018)